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## Environmental communication in business relations

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*Publication date:*  
2006

*Document Version*  
Publisher's PDF, also known as Version of record

[Link to publication from Aalborg University](#)

*Citation for published version (APA):*  
Holgaard, J. E. (2006). *Environmental communication in business relations*. Technology, Environment and Society, Department of Development and Planning, Aalborg University.

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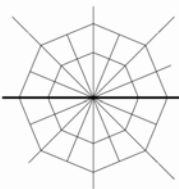
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**Working Paper 12 2006**

# **Environmental communication in business relations**

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**Technology, Environment and Society**

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**Department of Development and Planning  
Aalborg University**

# Colophon

March 2006  
ISSN 1603-9890  
© Authors

**Publisher:**

Division of Technology, Environment and Society  
Department of Development and Planning  
Aalborg University  
Fibigerstraede 13  
Denmark-9220 Aalborg Oest  
<http://www.plan.aau.dk>

**Layout:**

Rita Svendsen

**Print:**

UniPrint, Aalborg University

**Paper:**

Printed on 100% recycled Cyklus paper

# Abstract

This paper exemplifies how environmental communications is practised in and between companies to co-ordinate environmental improvements and to document the environmental profile of products. Three strategies for environmental communication are outlined, each with a given understanding embedded in the way, in which a company organise, communicate and learn in order to succeed in business. The ambition level regarding environmental improvements in each strategy can differ. The three strategies are not mutually exclusive; on the contrary, they supplement and support each other. Empirical data is collected by means of environmental reports, qualitative questionnaires, and a case study at Grundfos A/S in Denmark. These data will be discussed in relation to the three strategies of environmental communication. Different trends in environmental communication practise are found, and on this basis, recommendations are made in order to improve environmental communication in business relations.



# Environmental communication in business relations

By Jette Egelund Holgaard

## Environmental communication in business relations

Pollution prevention in companies has changed from a rather narrow and technical focus on optimisation of the existing production processes to a more organisational focus on environmental management. Recently, some front-runner companies are putting emphasis on the environmental impacts from products which are seen in a life cycle perspective. Globalisation with international product chains and the focus on environmental impacts from products are increasing the need for environmental communication in and between companies.

This paper builds on the assumption that a preventive environmental effort in a company is a social and distributed process, where environmental communication is “the glue” keeping the process together. Environmental communication within a company is a tool for a mutual gathering of experience and exchange of ideas among the employees; while external environmental communication in the product chain is necessary for documentation and co-ordination of a market-based and product-oriented environmental effort.

Three strategies for environmental communication are outlined, each with a given understanding embedded in the way in which a company organise, communicate and learn in order to succeed in business. The three communication strategies are combined with three strategies for environmental improvements: cleaner production, environmental management and life-cycle management. In this way, nine challenges for environmental communication are introduced.

The environmental communication practise is investigated by analysing 20 green accounts prepared by companies from the electronic industry, regarding their form, content and outreach strategy. Eight of these companies answered a questionnaire, which where designed to reveal statements about the company’s environmental effort, and their environmental communication in specific. Furthermore, empirical data was collected through a case study of environmental communication from, to and within the Danish enterprise Grundfos A/S.

In the following, the theoretical and methodological framework is presented in more details. From that point, we focus on experience with environmental communication in Danish companies.

# Strategies for environmental communication: theoretical framework

In this section, three strategies for environmental communication are developed, by taking three perspectives on organisations presented by Scott (1992) as the point of departure. Corresponding perspectives of learning and communication is added to emphasise the communication strategies, which follows from the three perspectives on organisations. Furthermore, the environmental dimension is added to stress, how different ambitions towards environmental improvements can specify and nuance the three strategies in relation to environmental communication.

Note that a differentiation between environmental information (on-way communication) and environmental dialogue (two-way communication) is made. Environmental information is created, whenever environmental concerns are embedded in texts, actions, visualisations or materials. Environmental dialogue takes one step further, when demanding some kind of interactions between the communication parties. In this context we use the notion strategies for environmental communication in order to capture both information and dialogue. However, as will be shown in the following, the different strategies differ in their emphasis.

## **The documentation strategy – information by demand**

In a rational system perspective, organisations are collectives oriented to pursuit relatively specific goals and exhibiting rather highly formalised social structures (Scott, 1992: 23). The term rationality is used in the narrow sense of technical or functional rationality and refers to the extent to which a series of actions is organised in such a way as to lead to predetermined goals with maximum effect (Scott, 1992:29). All rational theorists assume the existence of, and presume the importance of, the formalised structure to the extent that rules governing behaviour are precisely and explicitly formulated, and to the extent that roles and role relations are prescribed independently of personal attributes of individuals occupying positions in the structure (Scott, 1992: 31).

There is a strong parallel to what Mary Jo Hatch has characterised as industrialism, where some of the main characteristics are mass production, standardisation, routine, specialisation, growth, efficiency, control, hierarchy and vertical communication (Hatch, 1997:25). In metaphorical terms, the organisation works like a machine, organisations are designed as machines and the employees are expected to behave as if they were part of a machine (Morgan, 1996: 11-33). As described by Eisenberg & Goodall (2001:65), classical management approaches view communication as unproblematic. They posit that in organisations, communication is simply a tool for issuing orders, coordinate work efforts, and gaining employee compliance. The primary function of communication is transfer of information through the right channels (Eisenberg & Goodall, 2001:65). In a learning perspective, this view would be characterised as objective and behaviouristic, as employees are expected to respond in a given way to a given stimuli (see for example Hull, 1943).

How can such an organisation address environmental communication? For one thing, environmental issues would only be addressed, if they correspond to the demand for economic growth

and production efficiency. This could be initiated through direct demands from authorities, customers or others, or motivated by an expectation of a reduction in resource consumption. The company is thereby defensive, as they do not initiate but only react on environmental concerns, if there is no evident possibility of economic gain by reducing resources or the amount of waste. But in every case, one-way information would be emphasised, to reassure that the necessary procedures are followed within the organisation and the fulfilment of these procedures is documented in means of control. Such documentation can be made by issuing green accounts, obtaining certification of a management system, as well as by eco-labelling or product declarations.

### **The integrative strategy - organisational dialog**

In a natural system perspective organisations are collectives, whose participants share a common interest in the survival of the system and who engage in collective activities, that are informally structured (Scott, 1992:25). The major thrust of the natural system view is that organisations are more than instruments for attaining defined goals. Fundamentally, organisations are social groups attempting to adapt and survive in their particular circumstances. Organisations are not only means for achieving specified ends, but ends in themselves. (Scott, 1992: 52). Natural system theorists recognise the existence of formal structures, but they question their importance when compared with the informal structures based on personal characteristics or resources (Scott, 1992, 54).

In metaphorical terms, the natural system perspective would picture an organisation as an organism (see Morgan, 1997). Emphasis would be on the health of the system, and its ability to adapt to the environment. The health of the system points to a human resource approach. This approach holds that open communication between managers and employees ensures creativity, adaptability to change and satisfaction of the individual's needs and motivations (Eisenberg & Goodall, 2001: 83). Adapting to the environment is an internal affair, driven by human resource development.

Dixon (1999:6) describes such process of organisational adaptation in a learning perspective. Organisation learning is defined by the intentional use of learning processes at the individual, group and system level continuously to transform the organisation in a direction that is increasingly satisfying for to its stakeholders. The organisational learning process is described by the following four steps (Dixon, 1999:65):

1. Collection and distribution of information.
2. Integration of this in a specific organisational context.
3. Collective interpretation of the information by the organisational members.
4. Actions taken on that foundation.

The experiences from the actions taken by the organisational members will be compared to information from the outside and the processes of organisational learning begin all over again. Such theories of organisational learning emphasise intra-organisational dialogue, whereas inter-organisational communications take place only to collect information, which can be integrated and interpreted within the organisation.



If such an organisation should address environmental communication, the management would first of all address environmental demands with importance to company members. The employees are seen as resources in solving environmental problems by integrating, discussing and implementing new practises, which embraces environmental considerations. The company is proactive as members initiate environmental concern - but only within the system. They do not initiate a product chain dynamic, e.g. by setting up environmental demands for suppliers. In other words, the environmental communication strategy is integrative, as two-way communication is principally an internal activity. Such activities may be more or less formalised e.g. by establishing groups, discussing and co-ordinating environmental prevention of the firm. Likewise, the communication activities can be more or less systemised. The forthcoming ISO 14063 will provide a standard for environmental communication, which can be used to obtain such systematisation.

### **The distributed strategy – communities of practise**

In an open system perspective organisations are systems of interdependent activities linking shifting coalitions of participants; the systems are embedded in – dependent on continuing exchanges with and constituted by – the environments in which they operate (Scott, 1992:25). Not only, does the open system perspective loosen the more conventional views of structural features of organisations, it actually shifts attention from structure to process (Scott, 1992:92). With this perspective (Scott, 1992:94):

*"The doors and windows of the organisation have been opened, and we are more than ever aware of the vital flows and linkages that relate the organisation to other systems"*

In this context, we will emphasise the focus on inter-organisational relations, as it places us in a position where two-way communication is brought to the inter-organisational sphere. In metaphorical terms, the open system perspective would picture an organisation as an organism (Morgan, 1997), however emphasis is put on the ecology of the organisation and thereby the inter-organisational relations.

Parallel to this, Wenger (1998) use the notion of communities of practise to bring the concept of collective learning to the inter-organisational level. In a community of practise, common interest and engagement in solving a specific problem brings the members together – and this might as well imply communication and collaboration across traditional organisational limits. Thereby communication becomes a matter of both organisational and inter-organisational relations.

Eisenberg & Goodall (2001) use the notion inter-organisational communication networks to stress, that communication networks often works across organisational boundaries. Eisenberg et. al (1985) distinguish three kinds of network linkages in inter-organisational communication: institutional, representative and personal. An institutional linkage occurs without human communication, e.g. transfer of data. A representative linkage includes dialogue and negotiation between employees, who are appointed as representatives for the organisation. Last, a personal linkage includes informal dialogues between employees from different organisational contexts.

If such organisations should address environmental communication, they would not only address the environmental demands from the stakeholders, they would enter into a dialogue and collabo-

rate in order to reduce the environmental impact from business processes or products. The company is proactive as they initiate product chain dynamics. This involves their own environmental performance, but always in close connection to other initiatives outside the company. In other words, the environmental communication strategy is distributed, as two-way communication is also seen as a cross-organisational activity.

### Nine challenges of environmental communication

The three strategies for environmental communication are related to different levels of ambitions regarding environmental improvements, and then nine challenges for environmental communication occur (see figure 1). This forms an overview of the theoretical framework for investigating environmental communication.

	<b>Documenting communication strategy</b>	<b>Integrative communication strategy</b>	<b>Distributing communication strategy</b>
<b>Cleaner production</b>	Documentation of environmental performance (green accounts with mass balances of material flows)	Participation in internal project organisation (bringing together ad-hoc groups for specific projects)	Project organisation with external actors (ad-hoc cross-organisational project collaboration)
<b>Environmental management</b>	Documentation of the companies environmental practise (objectives, activities and improvements)	Participation from management and employees from production (environmental management teams)	Exchange of environmental experience. (Inter-organisational knowledge networks)
<b>Life cycle management</b>	Documentation of the environmental performance of products (eco-labels, EPD)	Participation from all units in the company (product orientated teams)	Co-ordination of the environmental effort in the product chain (Inter-organisational collaboration)

Figure 1: Nine challenges for environmental communication in business relations.

## Investigating environmental communication: methodological framework

The practise of environmental communication is analysed empirically by taking 20 green accounts as the point of departure. The following themes were used to analysis the texts:

- Actors: Description of the company, target group and refereed parties.
- Form: Use of media and codes to establish and maintain the interest of the reader.
- Content:: The choice of and argumentation for environmental information.

The analysis of the 20 green accounts from the electronic industry served to investigate, whether environmental communication is on the agenda in the green accounts, and whether the green accounts themselves signal a certain environmental communication strategy.

To capture the contexts of the texts, the companies were contacted by phone, and eight environmental managers, responsible for preparing the green account, agreed to answer a qualitative

questionnaire, with a high degree of open questions. The questionnaires were answered by email. The eight companies were small and medium size companies (SMEs) from the electronic industry. Two of the companies had an ISO14001 certified environmental management system, and one was planning the same certification. The main products are printed circuit boards, transformers and inductive components, and the main competitive factors in these companies were considered as speciality products, technological competence, quality, price and security of supply. The analysis of the environmental communication in the eight companies served to show, whether SMEs had a strategy for environmental communication and if not, to what extent they practised environmental communication without strategic considerations. Furthermore, the investigation served to exemplify, how different actors and media play a role in the companies' environmental communication.

Parallel to this, a case study was carried out at the Danish company Grundfos A/S, a producer of electro-mechanic pumps. Mr. Poul Due Jensen founded Grundfos in year 1945. In 2004, 67 companies in 43 countries represented the Grundfos Group. The turnover in 2004 was DKK 12,153 millions and the annual production is approximately 10 million pumps. More than 11000 people are employed at Grundfos. The Danish companies have more than 4000 employees. The case was picked as an extreme case to obtain information on a company, who is especially active when considering environmental activities and communication. Grundfos have a quality certification, ISO 9001:2000 and environmental certifications, ISO 14001 and EMAS (Environmental Management and Audit Scheme). They have a long tradition for environmental improvements with high ambitions, and the EMAS-registration implies a special attention to environmental communication.

Qualitative interviews were made with the environmental manager; three over a period of three years (Andersen 2000, 2001 & 2002) the head of the communication division (Mortensen, 2002), and three responsible persons for environment in the electronic production unit (Hansen, 2000), purchase to the electronic unit (Matthiesen, 2001) and product development (Thorup, 2001). Furthermore, written material describing the company's environmental performance was used (Grundfos, 2000, 2001, 2002a, 2002b, 2002c, 2005) and in addition, occasional information was provided by telephone or mail (Hansen, 2003; Matthiesen, 2003, Thorup, 2003).

The case study of Grundfos A/S served to exemplify, how different communities of practice are created in different ways, in order to structure and build up a culture for environmental communication. Furthermore, the analysis is related to the theoretical framework of strategies for environmental communication, looking for potentials of even further improvements of the environmental communication to, from and in the company Grundfos.

## Environmental communication in green accounts

14 of the green accounts included an environmental policy and 12 of these contained statements about collaboration and environmental communication internally or externally. Some examples were that companies stated that they would:

- Participate in an active and positive collaboration with suppliers, customers, employees and other interest parties with the main purpose of reducing the environmental impact from the company's production.
- Secure interest and engagement of employees in reducing the impact on the environment, and initiate the same development at company suppliers.
- Lead an open dialogue with interest parties, such as authorities, owners, employees, customers, suppliers and neighbours to secure that relevant interest and demands to environmental externalities are addressed.
- Involve employees actively in the environmental work both in regard to health & safety and the environment. Furthermore, inspire, inform and collaborate with authorities, customers, neighbours and other interest parties in developing the environmental efforts. Collaborate with suppliers to secure environmentally acceptable deliveries.

However, a kind of paradox was that one of the main tools, the green account, had a relatively low level of ambition regarding environmental information, even though the statements on environmental communication signals a high attention to such matters,. The main impression when analysing 20 green accounts is that there is a high potential for improving the explanations, figures, pictures, graphs, flow diagrams and story-lines illustrating the environmental effort at the company. An exception was a green account from the company, Danfoss Drives A/S, where aspects of an actual environmental communication strategy were presented. For example, it included ways of informing the employees by use of posters, intranet, dialogue and periodical information material with news from the company (Danfoss Drives, 2001).

Internal collaboration was mentioned occasionally with reference to different production units, economic divisions, purchase or product-development. No reference was given to the division of marketing and sale or to logistic divisions. In one case, a team was mentioned as responsible for preparing the green account. In the same way, the external collaboration was not unfolded but only included occasionally, e.g. by the mentioning of consultants, waste handlers, suppliers or customers.

Eleven of the green accounts mentioned an employee as contact person and this may invite to possible feedback. However, when contacting the companies for further investigation, it was not always all that easy to address the contact persons. In some cases, the environmental report has been prepared by a person, who was no longer related to the company, and we experienced a certain degree of confusion about whom to consult.

The follow up investigation of the eight companies showed that the green accounts were primarily prepared as a means of external communication, but the rate of feedback from external actors was relatively low, and the primary effect was internal. Five examples demonstrated that the green account had served as an internal tool in the environmental effort, e.g. by giving an overview of the environmental impacts.

From that point, it is surprising that the Confederation of Danish Industries (DI) considers the demand for green accounts as so disappointing that green accounts should be totally voluntary (DI, 2004). This investigation shows examples, where the demand from the authorities has initiated environmental considerations at company level. Furthermore, the company is challenged to take an environmental standpoint towards the public, and this makes the companies more prepared to address potential markets for environmentally sound products.

## **Formal documentation and informal integrative strategies in SME's**

The investigation of the eight companies showed that the environmental co-ordinator was a key-person in the environmental communication process. Trust, initiatives from employees and support from the management was considered as essential to the companies' environmental effort and for that reason environmental communication was an integrated part of the co-ordinators work. One of the environmental co-ordinators stated:

*"The collaboration across the company is essential. As an environmental manager you can not move anything, if not everyone is following the idea. Collaboration with external parties has some importance. Possible solutions to environmental problems can also be initiated by suppliers."*

However, some co-ordinators were rather isolated working on documentation of the environmental effort to inform the employees and management. For them cross-organisational collaboration was ascribed limited importance.

The internal target group was primarily employees from production and management board. Meetings were the most frequent media used for internal communication, and second were mail and phone. Mainly the local authorities, waste handling companies, suppliers and to some extent customers were the external target groups. Relations to consumer organisations, sector organisations, research institutes, consultants and NGO's were very limited. Mails were the most common media used in external information, but also meetings and company visits was considered as important to establish and maintain trust in relations to stakeholders – as one of the coordinators noted:

*"Trust means everything, without trust no collaboration."*

When asked directly, none of the eight environmental co-ordinators would say that the company had a tradition for communication and collaborating with external actors about environmental improvements. Only few examples existed, where environmental communication was used proac-

tively to initiate environmental efforts in the product chain, e.g. by taking environmental considerations in the purchase of products and services. On the contrary, it seemed more the other way around, as six of the eight companies had experienced environmental demands from their customers. However, the overall picture was still that the price of the products was a barrier, when it came to market environmental friendly products.

In general, the environmental communication in the eight companies was practised without considerable strategic considerations or systematisation. The internal collaboration was prioritised, as the main concern was given to environmental impact from the production. Some of the companies noted that they were sub-suppliers, and in business-to-business relations the need for external environmental communication was considered limited. Thereby, the environmental communication strategy of the SMEs was closely related to an integrative communication strategy, however on an informal level. The strategies focused on cleaner production and in some cases environmental management.

Last but not least, the investigation has been limited to electronics and several characteristics of this trade have shown the importance for the practise of environmental communication. For example, as electronic products are complex and as the product chain is relatively extensive, it is difficult to document the environmental impact from the products in a life cycle perspective. However, as the trade is highly differentiated there are good conditions for a national knowledge-network. In sum, the planning and development of environmental communication must be seen within the context of trade.

## **Environmental communication strategy at Grundfos A/S**

Even though the environmental communication at Grundfos is formal and systemised compared with the investigated SMEs, the head of the communication division stressed the importance of tacit knowledge when working with communication. Experience is considered as far more important than manuals and guidelines, as communication is closely connected to a situational judgement. This is explained by highlighting the following principles for environmental communication at Grundfos A/S (Mortensen, 2002):

- Timing, make sure the message is not delivered too soon or too late.
- Break the message down, so it becomes easy to understand.
- Make sure that the message will not leave unanswered questions.
- Be conscious about the link between the media and the code when communicating a message.
- Assess the relevance of the message considering the target group.
- Make sure the message is trustworthy.
- Use illustrations together with words to visualise the message

To comply with these principles in regard to environmental communication, several communities of practise has come into play. Groups are often applied to exchange environmentally related

knowledge and co-ordinate the environmental effort – both internally and externally. The employees are fond of the concept, as it motivates new environmental initiatives and give a new angle on the existing environmental practise. The investigation at Grundfos A/S showed several means to establish and maintain such communities of practise.

First of all, ideas from the employees to improve the company's environmental performance have to be valued. At Grundfos A/S this is done by making easy access to feedback by use of information technology, in combination with an ongoing dialogue between the environmental co-ordinators at a given production site and the employees. A database with the employees' ideas of environmental improvements has been established, and as a consequence, the motivation for contributing to the environmental prevention activities has increased considerable. This is combined with the effort to visualise that ideas from the employees are taken seriously and implemented, if feasible.

Second, the management has to be supportive. Several people at Grundfos A/S who work with environmental considerations stressed the importance of the environmental engagement from the former managing directors, Mr. Niels Due Jensen and Mr. Poul Due Jensen. For one thing in 1996, Mr. Niels Due Jensen initiated and decided upon the implementation of a certified environmental management system, and since the environmental effort has moved towards a sustainability perspective, by including product oriented and social perspectives.

Third, the attitude of the environmental co-ordinators is a key to create a culture for environmental communication in the daily practise. The environmental managing unit at Grundfos stressed that the environmental co-ordinators' ability to create a good atmosphere and exude openness towards the employees was reflected in the environmental management at the production units. Furthermore, many links was established on an informal and personal level to environmental knowledge from outside the firm.

Fourth, a certain code for communicating about environmental issues has to be established. For example, it is considered as important for employee participation in environmental management that the environmental responsible employees for specific production sites is actually seated at the specific sites, and has a technological understanding of the production processes. Another example is that the group of environmental managers and responsible employees for production sites participate in a joint course in environmental management. One of the advantages, which was stressed by the environmental manager, is that the group developed a common language, in which the environmental dialogue could be build.

Fifth, clashes between different communities of practise have to be recognised and handled through dialogue. One example at Grundfos was a close collaboration between environmental managers and the communication division in preparing environmental reports. Whereas the environmental managers emphasise the content of the reports, the division of communication emphasises the form and spreading of the publication - and sometimes this may lead to a trade off established through dialogue. Another example of similar trade-offs is between environmental considerations in production and design principles in product development.

Sixth, strong relations between information, dialogue and practise create the trust, on which the community is build. This is especially important in cross-organisational relations, where an environmental statement without a subsequent action can be damaging for the company image – and in the case of Grundfos strictly against company values. On the other hand, if there is a statement and an action but no dialogue in between, there is a risk of making environmental improvements at one place in the product chain, which actually increases the environmental impact at another phase in the product life cycle.

Seventh, there has to be something to communicate about. This might seem obvious, but never the less, establishment of an occasion to environmental communication was used with great success at Grundfos. One example was related to a campaign to prevent workplace accidents. At each production unit big cardboard sculptures were made, picturing a worker, informing about the time from last accident at the specific site, and how this accident was handled. This served as a centre for dialogue, as the employees discussed the solutions and competed to reduce the accidents from their production unit.

Looking at the case analysis at Grundfos A/S, in relation to the theoretical based strategies for environmental communication, we found that they were covering broad in regard to the nine challenges of environmental communication. However, there is a potential for further strategic improvement regarding the integrated environmental communication strategy on the product-oriented level. In other words, the environmental communication between product-developers, purchasers, environmental managers and marketing managers was neither visible nor formalised. This speaks for considering different communication strategies in relation to different levels of ambitions in evaluating and planning environmental communication.

## Conclusion

Three strategies for environmental communication have been developed, each with a given understanding embedded in the way a company get organised, communicate and learn to succeed in business:

- A *documentation strategy* where environmental communication is considered as information of the companies' environmental conditions in reaction to demands from authorities, share holders, customers, etc.
- An *integrative strategy* where environmental communication is part of the daily practise with space for mutual gathering of experience and exchange of ideas among the employees and the management.
- A *distributed strategy* where environmental communication is seen as the foundation for external co-operation in order to co-ordinate and initiate environmental efforts in the product chain.



The three strategies are not mutually exclusive; on the contrary they supplement and support each other. Each communication strategy is related to different levels of ambitions, to stress the interdependence of those views.

The analysis of 20 green accounts from the electronic industry shows that environmental communication is on the agenda in more than half of the green accounts, even when small and medium size companies are considered. Particularly, environmental communication issues are incorporated as statements in the environmental policy, whereas neither the form nor the content of the accounts signalises high ambitions in the preparation of environmental information.

The analysis of the environmental communication effort in the eight companies shows that environmental communication practice was based mainly on a formal documentation strategy and an informal integrative strategy. The formal documentation strategy covered mainly the green account and demands from authorities, whereas environmental communication activities were carried out with neither considerable strategic considerations nor systematisation.

The case analysis of the Danish company Grundfos showed examples of how different communities of practice is created in different ways to build up a culture for environmental communication. The main points of this investigation were:

- Ideas from the employees to improve the company's environmental performance have to be valued and the management has to be supportive.
- The attitude of the environmental co-ordinators is a key to create a culture for environmental communication in the daily practice.
- A certain code has to be established for communicating about environmental issues. Clashes between different communities of practice have to be recognised and handled through dialogue.
- Strong relations between information, dialogue and practice create trust, on which the community is built.
- There has to be something to communicate about - the point is to establish an occasion for environmental communication.

Furthermore, the analysis shows the importance of considering different communication strategies in relation to different levels of ambitions in environmental communication, as it points towards specific potentials for improvements of the environmental communication strategy at Grundfos.

If the product-oriented effort is diffused into the companies' practice, there will be an increasing need for focusing on environmental communication. In general, there is a lack of tools, in order to plan and carry out environmental communication in a spatial and distributed manner. All though some examples can be given, the tools are not sufficiently related to the companies' environmental effort. On the contrary, a list of tools supports the documentation strategy, e.g. green accounts, environmental labels and declarations.

The challenge is to bring the internal communication to a more cross-organisational level, to document the environmental impacts from products and to co-ordinate the environmental efforts in the product chain. To support these new challenges, there is a need for tools to map and plan environmental communication in companies in means of development, production and sale of cleaner products. The ISO 14063 initiative for environmental communication may have a catalytic effect in that concern.

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